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10/711,213	09/01/2004	Kei-Hsiung YANG	HANP0001USA	5212

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EXAMINER	
SIM, YONG H	
ART UNIT	**PAPER NUMBER**
2629	

NOTIFICATION DATE	DELIVERY MODE
04/14/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/711,213	YANG ET AL.	
	Examiner	Art Unit	
	YONG SIM	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 January 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,6,8,9 and 12-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,6,8,9 and 12-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 1/09/2008 have been fully considered but they are not persuasive.

At the outset, the Applicant is thanked for the thorough review and consideration of the Office Action dated 10/19/2007.

With respect to the Applicant's argument regarding claim 1, the Applicant argues that neither Colgan1 nor Boy does not teach or suggest "the second substrate has at least one edge jutting out the first substrate and connecting to the detecting circuit," and also argues that the couple 44 of Boyd is not "integral" (emphasis added) with the front light guide 12/second substrate.

However, Examiner respectfully disagrees since Boyd teaches a protrusion/coupler 44 which clearly has an edge that is "connected" (emphasis added) to the light guide 12/second substrate. Although Applicant argues that the coupler is not "integral" with the substrate, the claim expressly recites that "the second substrate has (emphasis added) at least on edge jutting out the first substrate." Therefore, Body's second substrate "has" a protrusion with an edge that juts out of the first substrate, since the edge is connected as a part of the second substrate to provide light to the second substrate.

With respect to the Applicant's argument regarding said second substrate connecting to the detecting circuit, Examiner respectfully asserts that both Colgan1 and Boyd show in fig. 1, the touch detecting circuits that are on top of the second substrate thereby being connected.

Further, the Applicant argues that there is a gap between the reflective LCD and the touch-sensitive transducer of Boyd's disclosure thus alleging that Boyd does not teach "a liquid crystal layer filled between the space formed by the first substrate and the second substrate."

However, Examiner respectfully disagrees since claim 1 clearly states that "a liquid crystal layer filled between the space (emphasis added)," and does not further limit what the "space" limits to. Thereby, Examiner accordingly construed on the broadest reasonable interpretation that the liquid crystal of Boyd is filled between the space, which included the gap, formed by the first and second substrates.

With respect to the Applicant's argument regarding the motivation to combine, Examiner further reaffirms that integrating the front lit display components to Colgan1's display will increase the brightness of the display since the reflectors provided by the front lit system will utilize the ambient light in addition to the front light source.

Examiner respectfully advises the Applicant to concisely and clearly draft the claims to accurately describe the invention as the Applicant desires to claim in order to overcome the prior art of record.

Therefore, the argument is moot and the previous rejections are maintained.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. **Claims 1 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colgan et al. (Hereinafter "Colgan1" US 6,483,498) in view of Boyd et al. (Hereinafter "Boyd" US 2002/0145593 A1).**

Re claim 1, Colgan1 teaches an input-sensor-integrated liquid crystal display panel (10 "LCD device" fig. 1), comprising:

a first substrate (8 "plate" Fig. 1) having at least one pixel controlling circuit (5 "TFT array" Fig. 1);

a second substrate (18 "plate" Fig. 1) having a touch-detecting circuit (32, 28 "conductive layers and linearization pattern/touch-detecting circuit" Fig. 1) on the surface of the second substrate and a color filter (18 "color filter" Fig. 1) which is

comprised within the second substrate formed on the touch-detecting circuit, being positioned on top of the first substrate (Fig. 1; 18 “plate/second substrate” and 26 – 28 are positioned on top of 8 “plate/first substrate”) ; and a liquid crystal layer (12, “LCD” Fig. 1) filled between the space formed by the first substrate and the second substrate (See Fig. 1) and the second substrate connecting to the detecting circuit (See Fig. 1. 18 “plate/second substrate” is connected to the detecting circuit 32 and 28).

But does not expressly teach wherein the second substrate has at least one edge jutting out the first substrate and connecting to the detecting circuit.

However, Boyd teaches a frontlit touch panel integrated with a reflective LCD (Boyd: Fig. 1) wherein a second substrate (Boyd: 12, Fig. 1) has at least one protrusion/edge (Boyd: 44, Fig. 1) jutting out the first substrate (Boyd: 40, Fig. 1).

Therefore, taking the combined teachings of Colgan1 and Boyd, a whole, it would have been obvious to a person having ordinary skill in the art to incorporate the idea of having a second substrate having at least one protrusion jutting out the first substrate as taught by Boyd into the input-sensor-integrated liquid crystal display panel as taught by Colgan1 to obtain an input-sensor-integrated liquid crystal display wherein a second substrate has at least one protrusion jutting out the first substrate in order to allow the display to be lit from the front to provide uniform illumination and elimination of backlight and placement of a reflector to increase the display’s reflectivity and brightness in well-lit ambient light conditions (Boyd: Para 0002).

Re claim 12, the combined teachings of Colgan1 and Boyd teach the input-sensor-integrated liquid crystal display panel of claim 1 wherein the second substrate has at least on protrusion jutting out the first substrate (Boyd teaches a frontlit touch panel integrated with a reflective LCD (Boyd: Fig. 1) wherein a second substrate (Boyd: 12, Fig. 1) has at least one protrusion/edge (Boyd: 44, Fig. 1) jutting out the first substrate (Boyd: 40, Fig. 1).)

4. **Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Colgan1 in view of Boyd, as applied to claims 1 and 12, and further in view of Colgan et al. (Hereinafter "Colgan2" US 6,177,918 B1).**

Re claim 6, Colgan1 and Boyd teach the input-sensor-integrated liquid crystal display panel of claim 1.

But does not expressly teach wherein the touch-detecting circuit is positioned on an inner side of the second substrate facing the first substrate.

However, Colgan2 teaches a touch-detecting circuit (Fig. 9A) for a liquid crystal display device positioned on the inner side of a substrate (Colgan2: 24 "substrate" Fig. 9) facing another substrate (22 "substrate" Fig. 2).

Therefore, taking the combined teachings of Colgan1, Boyd and Colgan2, as a whole, it would have been obvious to a person having ordinary skill in the art to incorporate the idea of having a touch-detecting circuit on the inner side of a substrate as taught by Colgan2 into the input-sensor-integrated circuit as taught by Colgan1 and

Boyd to obtain an input-sensor-integrated circuit comprising a touch-detecting-circuit positioned on an inner side of the second substrate facing the first substrate thereby preventing the touch-detecting-circuit from damage which can be caused by direct contact on the touch screen surface.

5. **Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colgan1 in view of Boyd, as applied to claims 1 and 12 above, and further in view of Hinata (US 6,369,865 B2).**

Re claim 8, Colgan1 and Boyd teach the input-sensor-integrated liquid crystal display panel of claim 1.

But does not show wherein the first substrate dis-coincides with the second substrate and has at least one protrusion.

However, Hinata discloses an input-sensor-integrated liquid crystal display panel wherein the first substrate (Hinata: 8b "substrate" Fig. 1) dis-coincides with the second substrate and has at least one protrusion (Hinata: See Fig. 1. Notice that the first substrate has a protrusion, and does not coincide with the second substrate.).

Therefore, taking the combined teachings of Colgan1, Boyd and Hinata, as a whole, it would have been obvious to a person having ordinary skill in the art to incorporate the idea of having a first substrate with a protrusion dis-coinciding with the second substrate as taught by Hinata into the display panel of Colgan1 and Boyd to obtain an input-sensor-integrated liquid crystal display panel with the first substrate with

protrusion dis-coinciding with the second substrate thereby allowing IC for driving liquid crystal to be directly bonded on the first substrate to reduce complexity of the design layout and the manufacturing process.

Re claim 9, the modified teachings of Colgan1 above teach the input-sensor-integrated liquid crystal display panel of claim 8.

But does not disclose 8 wherein the protrusion includes a plurality of signal connecting contacts.

However, Hinata discloses an input-sensor-integrated liquid crystal display panel wherein the first substrate (Hinata: 8b "substrate" Fig. 1) with protrusion which includes a plurality of signal connecting contacts (Hinata: See Fig. 1. 11 and 12 are the terminals for external connection for LCD drive circuit.).

Therefore, taking the combined teachings of Colgan1, Boyd and Hinata, as a whole, it would have been obvious to a person having ordinary skill in the art to incorporate the idea of having a first substrate with a protrusion which includes a plurality of signal connecting contacts as taught by Hinata into the display panel of Colgan1 and Boyd to obtain an input-sensor-integrated liquid crystal display panel with the first substrate with protrusion which includes a plurality of signal connecting contacts thereby allowing IC for driving liquid crystal to be directly bonded on the first substrate to reduce complexity of the design layout and the manufacturing process.

6. **Claims 13 and 15 - 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colgan1 in view of Mai (US 2004/0141096 A1) and further in view of Boyd.**

Re claim 13, Colgan1 teaches an input-sensor-integrated liquid crystal display panel (10 "LCD device" fig. 1), comprising:

a first substrate (8 "plate" Fig. 1) having at least one pixel controlling circuit (5 "TFT array" Fig. 1);

a second substrate (18 "plate" Fig. 1) having a touch-detecting circuit (32, 28 "conductive layers and linearization pattern/touch-detecting circuit" Fig. 1); and a liquid crystal layer (12, "LCD" Fig. 1) filled between the space formed by the first substrate and the second substrate (See Fig. 1) and the second substrate connecting to the detecting circuit (See Fig. 1. 18 "plate/second substrate" is connected to the detecting circuit 32 and 28).

But does not expressly teach a color filter, being positioned on top of the first substrate, the color filter and the touch-detecting circuit being formed on different sides of the second substrate.

However Mai discloses a flat display device (Mai: Fig. 1) with a touch panel comprising a second substrate (Mai: 132, Fig. 1) with a color filter (Mai: 130, Fig. 1) and a detecting circuit (Mai: 144, Fig. 1) formed on different sides of the second substrate.

Therefore, taking the combined teachings of Colgan1 and Mai, as a whole, it would have been obvious to a person having ordinary skill in the art to incorporate the flat display device (Mai: Fig. 1) with a touch panel comprising a second substrate (Mai: Fig. 1) as taught by Mai to the input-sensor-integrated liquid crystal display panel of Colgan1 to obtain an input-sensor integrated liquid crystal display panel with a second substrate with a color filter and a detecting circuit (Mai: 144, Fig. 1) formed on different sides of the second substrate to provide a display module with integrated touchscreen which is lighter and thinner (Mai: Para 9).

The combined teachings of Colgan1 and Mai teach the input-sensor-integrated liquid crystal display panel wherein a color filter and the touch-detecting circuit are being formed on different sides of the substrate.

But does not expressly teach wherein the second substrate has at least one edge jutting out the first substrate.

However, Boyd teaches a frontlit touch panel integrated with a reflective LCD (Boyd: Fig. 1) wherein a second substrate (Boyd: 12, Fig. 1) has at least one protrusion/edge (Boyd: 44, Fig. 1) jutting out the first substrate (Boyd: 40, Fig. 1).

Therefore, taking the combined teachings of Colgan1, Mai and Boyd, a whole, it would have been obvious to a person having ordinary skill in the art to incorporate the idea of having a second substrate having at least one protrusion/edge jutting out the first substrate as taught by Boyd into the input-sensor-integrated liquid crystal display panel as taught by Colgan1 and Mai to obtain an input-sensor-integrated liquid crystal display wherein a second substrate has at least one protrusion/edge jutting out the first

substrate in order to allow the display to be lit from the front to provide uniform illumination and elimination of backlight and placement of a reflector to increase the display's reflectivity and brightness in well-lit ambient light conditions (Boyd: Para 0002).

The limitations of claim 15 are substantially similar to the limitations of claim 8. Therefore, it has been analyzed and rejected similar to the rejection of claim 8.

The limitations of claim 16 are substantially similar to the limitations of claim 9. Therefore, it has been analyzed and rejected similar to the rejection of claim 9.

Re claim 17, the combined teachings of Colgan1, Mai and Boyd teach the input-sensor-integrated liquid crystal display panel of claim 13 further comprising a polarizer (Colgan1: 24, "Polarizer" Fig. 1).

Re claim 18, the combined teachings of Colgan1, Mai and Boyd teach the input-sensor-integrated liquid crystal display panel of claim 17 wherein the touch-detecting circuit is positioned between the second substrate and the polarizer. (Colgan1: See fig. 1. Notice that the detecting circuit is positioned between the second substrate (18) and the polarizer (24)].

The limitations of claim 19 are substantially similar to the limitations of claim 12. Therefore, it has been analyzed and rejected substantially similar to claim 12.

1. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Colgan1, Mai and Boyd, as applied to claim 13 above, and further in view of Colgan2.

Re claim 14, the modified teachings of Colgan1 teach the input-sensor-integrated liquid crystal display panel of claim 13.

But does not expressly teach wherein the touch-detecting circuit is positioned on an outer side of the second substrate

However, Colgan2 teaches the touch-detecting circuit is positioned on an outer side of an insulating layer (Colgan2: 73 "insulating layer/second substrate." Fig. 8H.).

Therefore, taking the combined teachings of Colgan1, Mai, Boyd and Colgan2, as a whole, it would have been obvious to a person having ordinary skill in the art to incorporate the idea of having the touch-detecting circuit positioned on an outer side as taught by Colgan2 into the LCD panel of Colgan1, Mai and Boyd to obtain an input-sensor-integrated liquid crystal display panel wherein the touch-detecting circuit is positioned on an outer side of a substrate in order to accurately derive the ratio of currents being measured.

2. Claims 20 – 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colgan1 in view of Ikeda et al. (Hereinafter "Ikeda" US 6,504,584), and further in view of Boyd.

Re claim 20, an input-sensor-integrated liquid crystal display panel (10 "LCD device" fig. 1), comprising:

a first substrate (8 "plate" Fig. 1) having at least one pixel controlling circuit (5 "TFT array" Fig. 1);

a second substrate (18 "plate" Fig. 1) having a touch-detecting circuit and being positioned on top of the first substrate; and a liquid crystal layer (12, "LCD" Fig. 1) filled between the space formed by the first substrate and the second substrate (See Fig. 1) and the second substrate connecting to the detecting circuit (See Fig. 1. 18 "plate/second substrate" is connected to the detecting circuit 32 and 28).

But does not expressly teach a color filter formed on the pixel controlling circuit.

However, Ikeda teaches a tablet integrated liquid crystal display wherein a color filter is on a TFT substrate/touch-detecting circuit (Ikeda: Para 44, lines 9 – 11)

Therefore, taking the combined teachings of Colgan1 and Ikeda, as a whole, it would have been obvious to a person having ordinary skill in the art to incorporate the tablet integrated liquid crystal display with a color filter on a TFT substrate as taught by Ikeda into the input-sensor-integrated liquid crystal display panel of Colgan1 to obtain an input-sensor integrated liquid crystal display panel with color filter on a TFT substrate in which the parallax between the tip of an input pen and a display image is eliminated

without occurrence of the bending of a substrate and the damage of a switching element (Para 0011).

The combined teachings of Colgan1 and Ikeda teach the input-sensor-integrated liquid crystal display panel with a color filter formed on the pixel controlling circuit.

But does not expressly teach wherein the second substrate has at least one edge jutting out the first substrate.

However, Boyd teaches a frontlit touch panel integrated with a reflective LCD (Boyd: Fig. 1) wherein a second substrate (Boyd: 12, Fig. 1) has at least one protrusion/edge (Boyd: 44, Fig. 1) jutting out the first substrate (Boyd: 40, Fig. 1).

Therefore, taking the combined teachings of Colgan1, Ikeda and Boyd, a whole, it would have been obvious to a person having ordinary skill in the art to incorporate the idea of having a second substrate having at least one protrusion/edge jutting out the first substrate as taught by Boyd into the input-sensor-integrated liquid crystal display panel as taught by Colgan1 and Ikeda to obtain an input-sensor-integrated liquid crystal display wherein a second substrate has at least one protrusion/edge jutting out the first substrate in order to allow the display to be lit from the front to provide uniform illumination and elimination of backlight and placement of a reflector to increase the display's reflectivity and brightness in well-lit ambient light conditions (Boyd: Para 0002).

The limitations of claim 21 are substantially similar to the limitations of claim 6. Therefore, it has been analyzed and rejected substantially similar to claim 6.

The limitations of claim 22 are substantially similar to the limitations of claim 14. Therefore, it has been analyzed and rejected substantially similar to claim 14.

The limitations of claim 23 are substantially similar to the limitations of claim 8. Therefore, it has been analyzed and rejected substantially similar to claim 8.

The limitations of claim 24 are substantially similar to the limitations of claim 9. Therefore, it has been analyzed and rejected substantially similar to claim 9.

The limitations of claim 25 are substantially similar to the limitations of claim 17. Therefore, it has been analyzed and rejected substantially similar to claim 17.

The limitations of claim 26 are substantially similar to the limitations of claim 18. Therefore, it has been analyzed and rejected substantially similar to claim 18.

The limitations of claim 27 are substantially similar to the limitations of claim 19. Therefore, it has been analyzed and rejected substantially similar to claim 19.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YONG SIM whose telephone number is (571)270-1189. The examiner can normally be reached on Monday - Friday (Alternate Fridays off) 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Y. S./
Examiner, Art Unit 2629

/Amr Awad/
Supervisory Patent Examiner, Art Unit 2629

4/8/2008